Factsheet

Prostate cancer diagnosis

What is the prostate?
The prostate is a small but important gland (organ) in the male reproductive system. The main role of the prostate is to make fluid that protects and feeds sperm. The prostate makes about one third of the fluid that is ejaculated (released) from the penis at orgasm (sexual climax).

Where is the prostate?
In young men the prostate is about the size of a walnut but it gets bigger with age. The prostate sits underneath the bladder and surrounds the top part of the urethra. Urine passes through the urethra on its way from the bladder to the penis.

What is prostate disease?
Prostate disease is any medical problem that affects the prostate gland. Common prostate problems include benign prostatic hyperplasia (BPH), prostatitis and prostate cancer.

What is prostate cancer?
Prostate cancer is a problem where cells within the prostate grow and divide abnormally so that a tumour forms. Prostate cancer is diagnosed mainly in men over the age of 50 years. Prostate cancer cells often grow very slowly and may not cause any problems or symptoms, or become life-threatening. However, less commonly, the cancer cells grow more quickly and may spread to other parts of the body. It is not known why cancers grow at different rates and why some tumours spread to other parts of the body.

How common is prostate cancer?
Excluding some forms of skin cancer, prostate cancer is the most common type of cancer diagnosed in men in Australia, with more than 19,000 Australian men diagnosed each year. It is more common in older men, particularly over the age of 50 years.

What causes prostate cancer?
The causes of prostate cancer are not known. However there are certain risk factors that have been linked with developing prostate cancer, including:

- family history: a father or brother with prostate cancer now or in the past or, in some instances, a relative with breast cancer
- older age
- history of subfertility
- a diet high in animal fat and protein
- race: men of Caucasian background are more likely to get prostate cancer than Asian men (particularly Asian men eating Asian rather than western diets).

What are the symptoms of prostate cancer?
Early prostate cancer rarely causes any symptoms. Problems with urination are sometimes present with prostate cancer; however, urinary symptoms are most likely to be caused by benign (non-cancerous) prostate conditions such as BPH (prostate enlargement) or prostatitis.

How is prostate cancer diagnosed?
There are several tests that can lead to a diagnosis of prostate cancer. A digital rectal examination and a PSA test are done to see if a man is likely to have prostate cancer. If these tests indicate that prostate cancer may be present, a biopsy is done to confirm the diagnosis.

A digital rectal examination (DRE) is where a doctor places a gloved finger into the rectum (back passage) to feel for size, shape and outline of the prostate (palpating’ the prostate). Although the prostate sits below the bladder, it can be felt through the rectum.

A PSA test measures the level of prostate specific antigen (PSA) in the blood. If the level of PSA or the DRE is abnormal, there is a higher chance of prostate cancer being found when a biopsy is done. However, most men who have a normal feeling prostate and a slightly raised PSA level do not have cancer found at biopsy.

How do I make a decision about having a test for prostate cancer?
Having a PSA test may lead to further decisions after the test results are back, especially if the blood PSA level is raised. So there are several things to think about before having a PSA test for prostate cancer: your age, your level of concern about having prostate cancer, your risk of having...
prostate cancer (for example, is there a family history of the disease?), and the risk and benefits of early detection. The benefit of a PSA test is that it may find prostate cancer when it is small and able to be cured. The risks include having unnecessary treatment, with the possible harmful side-effects of surgery or radiotherapy, if a cancer is found that may not have caused problems if left untreated. However, the option of active surveillance, whereby a low risk cancer is watched closely instead of being treated, helps to lower these risks.

**Why is biopsy necessary to diagnose prostate cancer?**

The PSA is not a test specifically for cancer. A raised PSA level in the blood just means there is something happening in the prostate which, in most instances, is not due to cancer. The only way to confirm whether prostate cancer is present is by prostate biopsy. The biopsy, to remove small tissue samples from the prostate, is usually done by a urologist. The samples are sent to a pathologist to be looked at under a microscope to see if cancer is present.

A transrectal or transperineal ultrasound-guided biopsy of the prostate gland uses ultrasound, with a probe placed in the rectum (back passage), to outline the prostate and guide the doctor in where to place the biopsy needles for collecting the tissue samples. Transrectal or transperineal biopsies can be unpleasant and at least half of men have minor symptoms for a day or two afterwards. With a transrectal biopsy, there is also a small risk of serious infection (septicaemia) even when ‘covering’ antibiotics are used. The risk of infection with transperineal biopsy is close to zero; however, this method of biopsy usually needs a general anaesthetic.

**What is a Gleason score?**

If cancer cells are present in the biopsy sample(s), the tumour is graded by looking through a microscope to see whether it looks like an aggressive or a slow-growing cancer. This is important for deciding how to manage or treat the cancer. The grading used is called a Gleason score (developed from a system described by Donald Gleason) with total rating scores from 6 to 10.

Aggressive, or faster-growing cancers, which are more likely to affect a man’s health and lifespan are called ‘high-risk cancers’, usually with a Gleason score of 8 to 10.

**What are the stages of prostate cancer?**

Prostate cancer can be described as either ‘localised’ or ‘advanced’ (metastatic). Localised prostate cancer is when it appears the cancer is located only within the prostate. Advanced (or metastatic) prostate cancer is when the cancer has spread to other areas in the body (such as lymph nodes or bone). Sometimes the cancer can spread from the prostate to nearby tissues and organs (such as the bladder or rectum) and this is described as ‘locally advanced’ prostate cancer.

**How is the type of prostate cancer treatment decided?**

Once a diagnosis of prostate cancer has been made a man and his doctor must decide what steps to take next for management and treatment. The decision will depend on a number of factors including:

- **Gleason score** – high (more aggressive), intermediate (Gleason 7), or low grade
- **stage of the cancer** – localised in the prostate gland or spread to other parts of the body
- **level of PSA in the blood and the rate of change of PSA over time (velocity)**
- age and general health
- side-effects of treatment
- personal preference.

To help with making decisions about treatment, patients can be placed into high, intermediate or low risk groups with respect to likely cancer outcome. This is done using a combination of factors.

For further information about prostate cancer please see Andrology Australia’s fact sheets: ‘Prostate cancer treatment’, ‘PSA testing’ and ‘Androgen deprivation therapy’.

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